



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

Report Nos.: 50-413/83-40 and 50-414/83-34

Licensee: Duke Power Company
422 South Church Street
Charlotte, NC 28242

Docket Nos.: 50-413 and 50-414

License Nos.: CPPR-116 and CPPR-117

Facility Name: Catawba 1 and 2

Inspection at Catawba site near Rock Hill, South Carolina

Inspector: W. C. Liu 11/18/83
W. C. Liu Date Signed

Approved by: J. J. Blake 11/22/83
J. J. Blake, Section Chief Date Signed
Engineering Program Branch
Division of Engineering and Operational Programs

SUMMARY

Inspection on November 1-4, 1983

Areas Inspected

This routine, unannounced inspection involved 26 inspector-hours on site in the areas of safety-related pipe support and restraint systems.

Results

In the areas inspected, one violation was identified (Criterion V - Failure to Follow Procedure For Hanger Installation and Inspection, Paragraph 5.b.).

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *R. Dick, Vice President - Construction
- *S. Dressler, Engineering Manager - Construction
- *L. Davison, Project QA Manager
- *R. Morgan, Senior QA Engineer
- *W. Goodman, QA Inspection Superintendent
- *T. Barron, QA Engineer - Hangers
- *C. Ray, Principal Engineer - Design Engineering
- *T. Bright, Field Engineer - Construction
- *D. Ethington, Assistant QA Engineer
- *L. Vincent, Office Engineer
- *D. Hensley, QA Technician
- *M. Hemphill, QA Engineer

Other licensee employees contacted included QC inspectors, technicians and office personnel.

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on November 4, 1983, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings listed below. No dissenting comments were received from the licensee.

(Open) Violation 413/83-40-01, Failure to Follow Procedure For Hanger Installation and Inspection, Paragraph 5.b.

3. Licensee Action on Previous Enforcement Matters

(Open) Violation, 413/83-22-01, Failure to Follow Procedure For Hanger Inspection

Licensee final QC inspection on this hanger had not yet been completed at the time of this inspection.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Safety-Related Pipe Support and Restraint Systems (50090)

Catawba support (hanger) inspections are performed by two groups: the hanger QC group and the weld QC group. The hanger QC group is responsible for the inspection of all support configurations with the exception of verification of size and acceptability of welds, which is not included in the scope of the support inspection. The weld QC group is responsible for the inspection of weld details in accordance with the licensee welding inspection procedures.

a. Procedure and Document Review

The inspector reviewed portions of the following engineering procedures and documents pertaining to safety-related pipe support and restraint systems to determine whether appropriate procedures have been established and whether they comply with NRC requirements and the licensee commitments.

- Specification No. CNS-1206.00-04-0003, Procedure Requirements for Fabrication and Erection of Hangers, Supports and Seismic Controls, Rev. 10
- QA Procedure M-51, Component Supports, Rev. 11
- Specification No. CNS-1196.02-00-0000, Specification for the Field Installation of Concrete Expansion Anchors, Rev. 11
- Construction Procedure CP-115, Installation of Concrete Expansion Anchors, Rev. 21
- Construction Procedure CP-432, Welding of Hangers, Supports and Seismic Controls, Rev. 11

b. Observation of Work and Work Activities (Unit 1)

The inspector selected the following sample of 10 hangers in the area of dynamic pipe supports and component support structures that had been QC finally inspected and accepted for a reinspection in order to determine the effectiveness of the hanger inspection program.

<u>Hanger Number</u>	<u>Piping System</u>
1-R-YM-0002	Demineralized Water
1-R-YM-0004	Demineralized Water
1-A-YM-3240	Demineralized Water
1-R-NB-0172	Boron Recycle
1-R-NS-1162	Reactor Building Spray
1-R-NS-1163	Reactor Building Spray
1-R-LD-0086	Fan Lube Oil
1-R-WN-3006	Diesel Generator Sump Pump

1-R-TE-0001
1-R-TE-1504

Turbine Exhaust
Turbine Exhaust

The above hangers were reinspected against their detail drawings for configuration, identification, fastener/anchor installation, clearances, member size, welds, and damage/protection. In general, the hangers were installed in accordance with design documents with the exception of 7 hangers identified below:

- (1) Hanger No. 1-R-YM-0004, Rev. 3, in the demineralized water system was examined. It was noted that two of the as-built plates were $3\frac{1}{2}$ " x $2\frac{1}{2}$ ". The drawing shows these two plates (items 5 and 6) to be $3\frac{1}{2}$ " x $3\frac{1}{2}$ ". Furthermore, the $3/16$ " fillet welds shown between the two tube beams and the channel were missing at Section A-A.
- (2) Hanger No. 1-A-YM-3240, Rev. 1, in the demineralized water system was inspected. It was found that there were no gaps between the two horizontal beams and the pipe. A $1/16$ " clearance between the top beam and the pipe specified on the detail drawing was not met. In addition, a portion of the top beam became bent and twisted from its original position.
- (3) Hanger No. 1-R-NB-0172, Rev. 2, in the boron recycle system showed that the gap between the concrete wall and the base plate was 0.179". This gap is over the allowable tolerance in accordance with Specification No. CNS-1206.00-04-0003 requirements.
- (4) Hanger No. 1-R-LD-0086, Rev. 4, in the fan lube oil system (inside Diesel Generator Building) was observed. It was noted that the cotter pin on top of the rear bracket was missing. The connecting pin was slipping out of the rear bracket. The end connection became disengaged. As a result, the sway strut was not able to perform its intended function.
- (5) Hanger No. 1-R-WN-3006, Rev. 0, in the diesel generator sump pump system was examined. It was found that two anchors (Catalog No. HN-3440) on the east side of the base plate had a projection of $2\frac{3}{4}$ ". The maximum allowable projection is $2\frac{3}{8}$ " in accordance with construction procedure CP-115 requirements.
- (6) Hanger No. 1-R-TE-0001, Rev. 6, in the turbine exhaust system (Feed Water Pump Room) was inspected. It was noted that the actual cold setting on the snubber (PSA-3) was $1\frac{7}{8}$ ". The cold setting shown on the detail drawing was $2\frac{5}{16}$ ". The difference between the two settings is $7/16$ ". In accordance with Support Inspection Instruction No. CN-3 requirements, the allowable tolerance for snubbers is $\pm 1/4$ ". This discrepancy is that the cold setting is $3/16$ " over the allowable tolerance.

- (7) Hanger No. 1-R-TE-1504, Rev. 8, in the turbine exhaust system was examined. It was noted that two of the six pipe lugs showed approximately 1/16" undersized fillet welds. The approximate length of the undersized fillet welds was 1/2" for NF No. 10 and 1/8" for NF No. 9 respectively. In accordance with QAP L-80 requirements, no undersized welds are allowed from the specified weld size.

Discrepancies identified from the above 7 hangers indicate that portions of these hangers were not installed by the craft in accordance with the design drawings. Furthermore, during the inspections in accordance with Specification No. CNS-1206.00-04-0003, Procedure M-51, Construction Procedure CP-115, Specification No. CNS-1196.02-00-0000, Support Inspection Instructions No. CN-3, and Construction Procedure CP-432, the QC inspectors failed to detect and verify the weld size and location, correct size for two steel plates, gap tolerance between the steel beam and the pipe, gap tolerance between the concrete wall and the base plate, sway strut end connection, excessive concrete anchor projection, and snubber cold setting. These are violations of 10 CFR 50, Appendix B, Criterion V, and are identified as Violation, 413/83-40-01, Failure to Follow Procedure for Hanger Installation and Inspection.

Within the areas inspected, one violation was identified.